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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/816,762

03/23/2001

Urato Aruga

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08/02/2004

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EXAMINER

TILLERY, RASHAWN N

ART UNIT

PAPER NUMBER

2612

6

DATE MAILED: 08/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/816,762

Applicant(s)

ARUGA ET AL.

Examiner

Rashawn N Tillery

Art Unit

2612

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 March 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Drawings

Figure 9 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawing sheets are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4, 6 and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Oda (US5608455).

Regarding claim 1, Oda discloses, in figure 1, a solid image capturing apparatus comprising:

an image capturing device (3);

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the image capturing device includes means for receiving an optical image (CCD);
means responsive to the optical image for conducting photoelectric conversion of the optical image to produce an image output signal (PD; figure 2A);
means for generating characteristic data of the image capturing device to produce a characteristic data signal (22; figure 2A);
an output terminal (ADC outputs signals to input 10);
means for outputting an output signal from output terminal (inherent feature); and
the means for outputting including means for outputting the output signal including both the image output signal and the characteristic data signal (Oda teaches outputting an image signal with dark current to subtracter 13; see col. 6, lines 5-64).

Regarding claim 2, Oda discloses, in figure 2A, the image capturing device includes an image field (21);

the image field includes an effective image field (21) and an invalid image field (22); and

the invalid image field including characteristic data of the solid image capturing device (Oda teaches OB area 22 generates a black level signal).

Regarding claim 3, Oda discloses, in figure 2A, the invalid image field is located outside the effective image field.

Regarding claim 4, Oda discloses, in figure 2B, the solid image capturing device includes an optical mask (39) covering the invalid image field; and

the optical mask includes a memory field which optically stores the characteristic data (see col. 7, lines 1-27).

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Regarding claim 6, Oda discloses, in figure 1, a lens (1); and
the lens being integrally combined with the solid image capturing device.

Regarding claim 7, Oda discloses, in figure 1, a processing circuit (8) for
processing data output from the output terminal; and
a determining means (13) for determining the characteristic data from the output
signal (Oda teaches subtracting dark current from the video signal).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all
obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 8-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over
Oda in view of Baxter et al (US5486853).

Regarding claim 8, Oda discloses, in figure 1, a lens unit (1, 2 and 3) containing
the means for generating characteristic data (OB area 22 in figure 2A); and
a main body (processor 8) of the image capturing apparatus.

Oda does not expressly disclose that the lens unit is adapted for interchangeable
mounting on the main body. However, Baxter reveals that it is well known in the art to
utilize an interchangeable camera head connected to a host processor. Baxter is
capable of sending characteristic data (type of CCD, serial number, lens status, etc)

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associated with a new camera head to the host processor (see figures 8 and 9; also see col. 7, line 34 to col. 8, line 22). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Oda's device by including Baxter's teachings. One would have been motivated to do so in an effort to accommodate a multitude of camera heads.

Regarding claim 9, see claim 8 above.

Regarding claim 10, Oda discloses, in figure 1, a processing circuit (8) for processing the output signal; and

a determining means (13) for determining data that is characteristic data to the solid image capturing device and processed by the processing circuit (Oda teaches subtracting dark current from the video signal).

Regarding claim 11, Oda discloses, in figure 1, a processing circuit (8) for processing the output signal; and

a determining means (13) for determining data that is characteristic data to the solid image capturing device and processed by the processing circuit (Oda teaches subtracting dark current from the video signal).

Regarding claim 12, Oda discloses the output signal includes the characteristic and the image output signal (Oda teaches subtracting dark current from the video signal); and

the determining means time separating the characteristic data from the image output signal, whereby a single output signal is enabled to contain both the

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characteristic data and the image output signal without interference there between (see col.. 9, lines 38-44).

Regarding claim 13, Oda discloses, in figure 2A, the characteristic data is contained in a field outside of a field that generates the image output signal.

2. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Oda.

Regarding claim 5, Oda teaches a device for subtracting dark current from a video signal. The dark current is generated by covering an outside field of an effective image field with an optical mask. Oda does not expressly disclose a non-optical means for storing the characteristic data. Official Notice is taken that it is well known in the art to utilize rewritable memories for storing dark current. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Oda's teachings by implementing a non-optical storage means in the memory field as a matter of design choice.

Conclusion

1. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Tani teaches a method of dark current subtraction utilizing an EEPROM. Hynecek teaches a CCD imager with dummy pixels. Bakhle et al teach a method for dark frame cancellation. Kobayashi teaches a CCD imager with an effective image area and a shielded area. Miyazaki et al teach an imager for eliminating the influence of noise. Inagaki et al teach an imager for correcting dark current. Yoshihara et al teach an imager having optical black picture elements. Schreiner teaches a

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method for determining row correction. Corum et al teach dark frame correction. Kijima teaches an imager with optical black areas. Horii et al teach a device with interchangeable lens unit. Parulski et al teach a device with interchangeable camera heads.

2. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rashawn N Tillery whose telephone number is 703-305-0627. The examiner can normally be reached on 9AM-6:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wendy Garber can be reached on 703-305-4929. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RNT


NGOC-YEN VU
PRIMARY EXAMINER